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PROTECTION OF ENDOGENOUS THERAPEUTIC PEPTIDES
FROM PEPTIDASE ACTIVITY THROUGH CONJUGATION
TO BLOOD COMPONENTS

5 This application claims benefit of Provision Appls. 60/134,406 Filed
 May 17, 1999, Provisional No. 60/153,406 filed Sep 10, 1999 and Provisional No.
 60/159,283 filed Oct. 15, 1999.

FIELD OF THE INVENTION

This invention relates to modified therapeutic peptides. In particular, this invention relates to protection of endogenous therapeutic peptides from peptidase activity through a modification that enables the peptide to selectively conjugate to blood components, thus protecting the peptide from peptidase activity and increasing the duration of action of the therapeutic peptide for the treatment of various disorders.

BACKGROUND OF THE INVENTION

Many endogenous peptides have been described as key components of biological processes. Some of these peptides have been identified as key therapeutic agents for the management of various disorders. In general, endogenous peptides are more desirable as therapeutic agents than synthetic peptides with non-native sequences, because they do not produce an immune response due to their endogenous character. In addition, endogenous peptides are highly specific for their target receptors and are easy to synthesize and manufacture. However, a major difficulty with the delivery of such therapeutic peptides is their short plasma half-life, mainly due to rapid serum clearance and proteolytic degradation via the action of peptidases.

Peptidases break a peptide bond in peptides by inserting a water molecule across the bond. Generally, most peptides are broken down by peptidases in the body in a manner of a few minutes or less. In addition, some peptidases are specific for certain types of peptides, making their degradation even more rapid. Thus, if a peptide is used as a therapeutic agent, its activity is generally reduced as the peptide quickly degrades in the body due to the action of peptidases.

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